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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/522,618	01/31/2005	Tadayuki Kameyama	052009	6711

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EXAMINER	
EMPIE, NATHAN H	

ART UNIT	PAPER NUMBER
1792	

NOTIFICATION DATE	DELIVERY MODE
11/12/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentmail@whda.com

Office Action Summary	Application No.	Applicant(s)	
	10/522,618	KAMEYAMA ET AL.	
	Examiner	Art Unit	
	NATHAN H. EMPIE	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 October 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,8,9,11-18 and 31-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 8-9, 11-18, and 31-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/14/09 has been entered. Claims 1, 8-9, 11-18, and 31-36 are currently pending.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 8-9, 11-18, and 31-33, 34, and 36 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1 recites the limitation "wherein an arbitrary point on the film is impregnated in the swelling bath for a total length of time of from 63 to 130 seconds"; however the applicant's original disclosure does not provide sufficient support for this claimed range.

Claim 33 recites the limitation "the required length of time (b) is from 20 to 120 seconds"; however the applicant's original disclosure does not provide sufficient support for this claimed range.

Claim 34 recites the limitation "the required length of time (b) is from 33 to 120 seconds"; however the applicant's original disclosure does not provide sufficient support for this claimed range.

Claim 36 recites the limitation "the required length of time (a) is from 2 to 11 seconds"; however the applicant's original disclosure does not provide sufficient support for this claimed range.

"the required length of time (b) is from 35 to 110 seconds"; however the applicant's original disclosure does not provide sufficient support for this claimed range.

The other dependent claims do not cure the defects of the claims from which they depend.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 8, 14-17, and 31-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikemoto et al (JP 10153709A; hereafter Ikemoto).

Claims 1, 17, 33 -36: Ikemoto teaches a method of producing a polarizing film (Abstract and [0014 – 0020]), comprising the steps of: allowing a hydrophilic polymer film (polyvinyl alcohol, (PVA) based film) to swell wherein the polymer film is conveyed by means of a guide roll (guide rolls pictured as small circles in Fig 1) so as to be impregnated in an aqueous solvent (water) in a swelling bath (swelling tank, (10)) (Fig 1, and [0008], [0016]);

dyeing the polymer film using a dichroic substance (film passes through a dyeing tank (12) containing an iodine solution; Fig 1, and [0017]);

and stretching the polymer film (stretching tub (14); Fig 1, [0018]);

wherein in the swelling step, at least a first guide roll and a second guide roll are arranged in the swelling bath (Fig 1), and when the polymer film is impregnated in and allowed to travel in the aqueous solvent (Fig 1, [0008], [0016]),

Ikemoto further teaches that this process of forming a polarization film is significantly concerned with the prevention of wrinkle formation, noting that when a PVA resin film swells too much, wrinkles occur, and that if an unstable film traverses through a series of zigzagging guide rollers such wrinkles can be worsened [0008][0033]. Ikemoto also teaches the general conditions of result effective variables such as the length of time the film is submerged in the swelling bath (abstract, [0030-0033]). Ikemoto doesn't explicitly teach the polymer film is brought into contact with the first submerged guide roll within a time up to when swelling of the polymer film occurs within 15 seconds to 25 seconds and further is brought into contact with the second guide roll after the swelling of the polymer film has occurred within 15 seconds to 25 seconds or

the specific time conditions of claim 1. Although Ikemoto does not explicitly teach the swelling of the polymer film occurs within 15 seconds to 25 seconds ("abruptly"), the examiner asserts that as Ikemoto teaches a hydrophilic polymer film (PVA) impregnated in an aqueous solvent (water) in a swelling bath, that one of ordinary skill would expect, at the least, for the film will abruptly swell within 15 to 25 seconds; since where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of obviousness has been established, In re Best, 195 USPQ 430, 433 (CCPA 1977) (Further applicant's own admission "when a hydrophilic polymer film is impregnated in an aqueous solvent in a swelling bath, generally, swelling occurs abruptly within 15 to 25 seconds" (Remarks of 10/2/08, pg 8, first full paragraph)). Further, Ikemoto provides an example of total dipping time as in the range of 4 to 6 minutes (abstract, [0011]), but does not explicitly teach wherein an arbitrary point on the film is impregnated in the swelling bath for a total length of time of from 63 to 130 seconds. But, as Ikemoto teaches a method of obtaining wrinkle free polarization films, while describing general problems involved with swelling and the transport of swelled films, as well a range of film submergence time; it would have been obvious to one of ordinary skill in the art to alter a length of time of impregnation as well as altering the length of time up to when the submerged film is brought into contact with a first and second submerged guide rolls based on the amount of swelling in the polymer film, since it has been held that where the general conditions of a claim are disclosed in the

prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Claim 8: Ikemoto further teaches the polymer film is impregnated in the swelling bath for a time in the range of 4 to 6 minutes (abstract, [0011]).

Claim 14 and 32: Ikemoto further teaches the temperature of the swelling bath lies in the range of 30 – 40°C (abstract, [0011]).

Claim 15: Ikemoto teaches that the polymeric film swells in the swelling bath, as well as being pulled along guide rollers, so inherently when the film material swells it is stretched.

Claim 16 and 32: Ikemoto teaches the method of claim 1 (described above), but does not explicitly teach wherein with respect to a length of the polymer film before being subjected to the swelling step, a stretch ratio of the polymer film in the stretching treatment is in a range of 1.5 to 4.0 times. A "stretch ratio" as described by applicants disclosure (pg 13 lines 9 – 30) would appear to be dependant upon the time the polymeric film is submerged in the swelling bath, as described in the rejection to claim 1 (above), the submerging time is a result effective variable, therefore it would have been obvious to one of ordinary skill in the art to alter a length of submerging time, correspondingly altering the "stretch ratio", to achieve a range of 1.5 to 4.0 times, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Claim 31: Ikemoto further teaches wherein the aqueous solvent in the swelling bath is water (see, for example, [0016]),

wherein the dyeing step is conducted in a dyeing bath containing dichroic substance (iodine solution) and potassium iodide (the coloring tank contains an iodine solution further comprising potassium iodide, see, for example, [0017]), and

wherein the stretching step is conducted in a stretching bath containing boric acid ((stretching tub (14); Fig 1, contains boric acid, see, for example, [0018]).

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikemoto as applied to claim 1 above, and further in view of Sanefuji et al (US 2002/0001700 A1).

Ikemoto teaches the method according to claim 1, and further teaches that the final thickness, following drying, of the PVA film produced from the polarizing film process is about 20 – 35 microns ([0020]). Ikemoto is silent as the starting PVA film thickness; therefore Ikemoto does not explicitly teach the PVA film before being subjected to a swelling treatment has a thickness in a range of not more than 110 micron. Sanefuji teaches that the typical thickness range of a PVA film (pre-swelling) is preferably between 40 to 120 microns, as when the average thickness is less than 20 micron, stretching break occurs, and when the average thickness is over 150 microns stretching irregularity occurs in monoaxial stretching in producing a polarization film ([0027]). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to have selected a pre-swollen PVA film thickness of between 40 to 120 microns, as taught by Sanefuji, for the PVA film thickness in the polarization

process taught by Ikemoto as Ikemoto is silent, and values outside of this taught range would lead to breaking or irregular stretching of the polarization film. Although Ikemoto in view of Sanefuji doesn't specifically teach the PVA film before being subjected to a swelling treatment has a thickness in a range of not more than 110 micron, it would have been obvious to one of ordinary skill in the art at the time of invention to have selected a thickness range of not more than 110 microns, since in the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a *prima facie* case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976).

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikemoto as applied to claim 1 above, and further in view of Harita et al (US 2001/0024322 A1; hereafter Harita).

Ikemoto teaches the method according to claim 1, wherein the hydrophilic polymer film is a PVA based film ([0007]), but is silent as to specific chemistries of the PVA film. Harita teaches producing a polarization film from a PVA based film via processes including stretching, dyeing, fixing, etc. (abstract, [0049]). Harita specifically teaches adding 10 parts by weight of glycerin to 100 parts by weight of a PVA preparation solution (~9 wt %) ([0062]). Harita further teaches that when producing the PVA film it is advantageous to incorporate plasticizer such as glycerin as it is suitably used for improving the PVA films stretchability ([0034-0035]). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to have incorporated ~9

wt % of glycerin into a PVA polymer film, as taught by Harita, in the process taught by Ikemoto as the addition would improve the stretchability of the PVA based film.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikemoto as applied to claim 1 above, and further in view of Burger (US patent 3,492,185; hereafter Burger).

Ikemoto teaches the method of claim 1 (described above), but is silent as to what type of guide rolls are used in the process. Using bent roll as guide rolls is well known in the art as evidenced by Burger (col 6 lines 45 – 51). Burger further teaches that a bent roll can aid the reduction of longitudinal wrinkles in a web product (col 6 lines 45 – 51). Ikemoto teaches that the purpose of their invention is to obtain wrinkle free polarization sheets ([0008], [0011]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected specific types of guide rolls, such as a bent roll, for any guide roll(s) of the method taught by Ikemoto, for the purpose of reducing longitudinal wrinkles in the film.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikemoto as applied to claim 1 above, and further in view of Kondo (JP 2000-147252; hereafter Kondo).

Ikemoto teaches the method of claim 1 (described above), but is silent as to what type of guide rolls are used in the process. Kondo teaches a method for producing a polarization film, where the hydrophilic polymer film is contacted by rubber spiral guide

rolls, arranged as 1 or 2 or more of the guide rolls, arranged besides or within a bath liquid (Fig 1, [0014-0016]). Additionally Kondo teaches that the motivation for using spiral rubber covered rolls is that they prevent the generation of fractures, and blemishes to the film [0004]). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated a spiral roll as a guide roll, as taught by Kondo, for a guide roll other than the first guide roll in the process taught by Ikemoto as the incorporation of multiple spiral rolls will lead to lower occurrence of film fracture and blemishes.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikemoto as applied to claim 17 above, and further in view of Tanaka et al (US patent 5,071,906; hereafter Tanaka).

Ikemoto teaches the method of claim 17 (described above), where the dichroic solution is an iodine solution ([0017]), but Ikemoto does not explicitly teach the iodine solution contains at least two organic dyestuffs. Tanaka teaches a method of producing polarizing films where the addition of a dichroic dye solution is applied to a PVA film (col 5 line 55 – col 6 line 16). Further Tanaka teaches that iodine and dichroic dyes (plural) may be used together in order to control the hue (col 6 lines 10 – 13). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to have added a plurality of dichroic dyes, as taught by Tanaka, to the iodine solution taught by Ikemoto in order to control the hue of the dye solution.

Response to Arguments

Applicant's arguments filed 10/14/09 have been fully considered but they are not persuasive.

With respect to applicant's arguments (pg 7-8 or remarks) directed to the claim rejections of claims 33 and 34 made under 35 USC 112 first paragraph, the examiner is unconvinced. The applicant has cited pg 5 line 35: "The required length of time (a) in the range of, preferably 1.2 seconds to 9 seconds, and more preferably, 2.5 seconds to 7 seconds" and page 6 line 24: "Further, a total length of time (b) is, for example, preferably in the range of 25 to 180 seconds, more preferably 30 to 160 seconds, and particularly preferable 40 to 140 seconds". These passages do not explicitly support time (b) ranges of "20 to 120 seconds", or "33 to 120 seconds". Considering applicant's later arguments about the proposed criticality of these time intervals, the absence of explicit support for these specific ranges leads the examiner to maintain the 35 USC 112 rejections (and similarly add additional 35 USC 112 rejections to the most recent amendments filed 10/14/09, as discussed above).

Applicant's arguments that the references do not teach the newly added claims are unconvincing, as discussed in the rejections of claims 35 and 36 above.

A) 1. In response to applicant's arguments that Ikemoto "does not teach result effective variables" (pg 9-10 of remarks). The examiner asserts that prior art Ikemoto is concerned with preventing wrinkle formation (much like applicants own invention) (see, for example, [0008], [0033]), and further teaches that the degree of swelling of a polarization film must be managed throughout the process ([0009]). Further, the

examiner maintains that Ikemoto teaches the general conditions of result effective variables such as the duration of submersion, bath concentration, bath temperature, etc. and their influence on the film submerged in the swelling bath (abstract, [0011], [0030-0033], Table 1) and one of ordinary skill in the art would appreciate that variables influencing the duration of submersion and degree of swelling (such as duration of specific guide roll contact and degree of polymer film saturation state in relation to the guide rolls) would be result effective variables as well. As such, it would have been obvious to one of ordinary skill in the art to alter such conditions as desired, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

A)2. In response to the applicant's argument (pg 10-11 of remarks) that the teachings of Ikemoto would not motivate, and in fact teach away from attempting to reduce the timing in the swelling bath, the examiner asserts that Ikemoto explicitly teaches that time is a result effective variable (see, for example, [0011]), and although Ikemoto has provided examples at 4-6 minutes, the examiner asserts that disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments. *In re Susi*, 440 F.2d 442, 169 USPQ 423 (CCPA 1971). Further the examiner asserts that for manufacturing processes, time is money, so one of ordinary skill in the art would certainly be motivated to optimize process time.

A) 3. In response to applicants arguments that the time the Ikemoto film is brought into contact with the first roller is about 1 minute and 20 seconds to 2 minutes; and second roller from 2 min. and 40 sec to 4 min. based on solely the diagrammatic relation of Fig 1; the examiner asserts that when the reference does not disclose that the drawings are to scale and is silent as to dimensions, arguments based on measurement of the drawing features are of little value. See *Hockerson-Halberstadt, Inc. v. Avia Group Int 'l*, 222 F.3d 951, 956, 55 USPQ2d 1487, 1491 (Fed. Cir. 2000).

B) The declarations under 37 CFR 1.132 filed 4/20/09, and 10/14/09 are insufficient to overcome the rejection of claims 1, 8-9, 11-18, and 31-36 based upon 35 USC 103 of Ikemoto alone and in view of the appropriate secondary references as set forth in the last Office action because:

B)1. Applicant's amendment of claim 1 has resulted in a 35 USC 112 1st paragraph rejection.

B)2. Applicant's most recent declaration has explicitly stated the results as unexpected.

B)3. The support provided to demonstrate unexpected results has provided scientific evidence from a series of experiments demonstrating the results of performing a process while altering process variables. The results of Graph 1 (pg 2 of Declaration) appear to present an improvement between the example runs and the comparative example runs; however, Graphs 2 and 3 only provide results of data within the claimed range and fail to contrast values of the data within claimed ranges to values outside of the claimed ranges. Further, with regard to Graph 1, as currently claimed, the applicant

has sought a range from 0.6 to 12 seconds (claim 1) (1.2 to 9 seconds, claim 33) for "period (a)"; however the evidence provided supplies data between 2 and 11 seconds, not properly supporting the claimed range. Similarly, the applicant has sought a range from 13 to 120 seconds (claim 1), (20 to 120 seconds for claim 33) (33 to 120 seconds for claim 34) for "period (b)"; however the evidence provided supplies data between 35 and 110 seconds, not properly supporting the claimed range. Similar incongruities exist with claim 35; while claim 36 has incurred a rejection under 35 USC 112 1st paragraph rejection as described above. Additionally the evidence provided is conducted at a series of temperatures from 25 to 42 °C, and comparative example from 25-35°C, wherein at least claim 1 makes no such limitations to the process.

B)4. Thus there is no showing that the objective evidence of nonobviousness is commensurate in scope with the claims. In view of the forgoing, when all of the evidence is considered, the totality of the rebuttal evidence of nonobviousness fails to outweigh the evidence of obviousness.

As to the dependent claims, they remain rejected as no separate arguments are provided.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NATHAN H. EMPIE whose telephone number is (571)270-1886. The examiner can normally be reached on M-F, 7:00- 4:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland can be reached on (571) 272-1418. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/N. H. E./
Examiner, Art Unit 1792

/Michael Cleveland/
Supervisory Patent Examiner, Art Unit 1792